SchraderAir™
Schrader - Air solutions since 1845

Compressor Operating and Maintenance Manual

TWO STAGE 15 HP PUMP

MODEL: SA315240H346__

SERIAL #_____

SAFETY INSTRUCTIONS

When using air compressors and compressed air accessories, basic safety rules and precautions should always be followed including the following:

1. Read all instructions fully.

2. Wiring, starters, breakers and other related electrical equipment should conform to electrical codes.

3. Shut off main power and release all pressure from the unit and set pressure regulator to zero pressure before removing or adding parts or attachments and before cleaning compressor.

4. Do not operate any compressor with damaged wiring. Do not operate after the compressor or air handling parts have been dropped, damaged, or shows signs of deterioration, weakness or leakage. Do not use them if any deficiency is found. Withdraw from service and repair or discard such parts.

5. Regularly inspect hose and load handling fittings for signs of damage, deterioration, weakness or leakage. Do not use them if deficiency is found. Withdraw from service and repair or discard such parts.

6. Never use air pressurized accessories or parts in the air system not suitable for the maximum air pressure involved. This is dangerous. Be sure maximum pressure specified by the manufacturer is well above the working pressure of your compressor.

7. Keep clear of compressor. It will become extremely hot. Moving parts should be avoided. Do not operate without belt guard.

8. Keep pressure relief devices free from paint or other accumulation.

9. Drain tank daily to prevent rust formation in the tank.

10. Never reset pressure switch or safety valves.
11. Never store flammable liquids or gases in the vicinity of the compressor or compressor starting equipment.

12. **SHUTOFF VALVES ARE NOT TO BE INSTALLED IN THE DISCHARGE LINE BETWEEN THE COMPRESSOR AND THE RECEIVER UNLESS A SAFETY VALVE, WITH ADEQUATE FLOW CAPACITY AND PRESSURE SETTING, IS LOCATED BETWEEN SHUTOFF VALVE AND THE COMPRESSOR.**

13. When compressor is used for spraying:
Do not spray in vicinity of open flame or other surfaces of ignition.

14. Do not smoke when spraying paint, insecticides, or other toxic or flammable substances.

15. To avoid spontaneous combustion, discard waste rags into approved metal waste cans.

16. Do not spray in confined spaces.

17. Use face mask when spraying.

18. Always direct paint or sprayed material away from compressor and locate compressor to minimize paint overspray accumulation on compressor or sprayer parts.

19. When using cleaning solvent, follow the instructions provided by the solvent manufacturer.

INSTALLATION AND OPERATING INSTRUCTIONS

UNPACKING INSTRUCTIONS

The two stage compressor was inspected at the factory and packaged to protect against shipping damage. When you unpack your unit, inspect for damaged or missing parts. If there is any damaged or missing part, the transportation company's agent should make a notation to the effect on the Bill of Lading. **Claims, should be settled directly with the transportation company.**

INSTALLATION

The compressor must be placed in a clean and well-ventilated room. Compressor should be located at least 12 to 18 inches away from a wall or other obstruction that will impede the flow of air through the fan-bladed flywheel. **Rotation of the fly-wheel must be in the direction of the arrow cast into the flywheel.**

The compressor should be as near a possible to air outlets to avoid long pipe lines. Do not place compressor where heat is excessive. Provide adequate fresh air and exhaust ventilation from area in which the compressor is located.

Place compressor on a firm, level floor. Permanent installations should be bolted to the floor. Bolting holes are provided in the base feet. Shim compressor level before bolting down to floor. Avoid putting stress on a foot by pulling it down to floor. This may cause abnormal vibration. **Remove wood shipping skid before installation.**

DIRECTION OF ROTATION

As the compressor starts, check the rotation of the units, Standard rotation is clockwise, viewing the compressor from the side of the sight glass. A rotation arrow, is placed on the flywheel at the factory. Should the rotation be incorrect, disengage the power and correct the motor wiring.

WARNING: AFTER THE COMPRESSOR IS STARTED, IT WILL OPERATE AUTOMATICALLY.

START-STOP (PRESSURE SWITCH CONTROL)

When the air pressure in the receiver reaches the preset high pressure level the pressure switch opens, electrically stopping the compressor driver motor. As the air is used from the receiver the pressure drops allowing the pressure switch to close at the preset low pressure level, restarting the driver motor.

LUBRICATION OF COMPRESSOR

This compressor was shipped without oil. Before operating, fill crankcase with oil to level on oil sight gauge. Do not over fill. Oil recommended: Premium Grade SchraderAir 826020 - 30WT Non-Detergent. Change oil every three (3) months or 500 hours. After initial start up change oil after first two weeks of operation. If oil turns milky replace oil and move unit to less humid conditions.

PRESSURE SWITCH ADJUSTMENT & UNLOADER

The pressure switch has a range adjustment and a differential adjustment. See instructions located under pressure switch cover. The Cut-Out (Compressor Shutdown) is the pressure at which the contacts open, and the Cut-In (Compressor Restart) is the pressure at which the switch contacts close.

Pressure switch controls the opening and closing of the contacts in the magnetic starter. Do not wire electric motor directly to pressure switch.

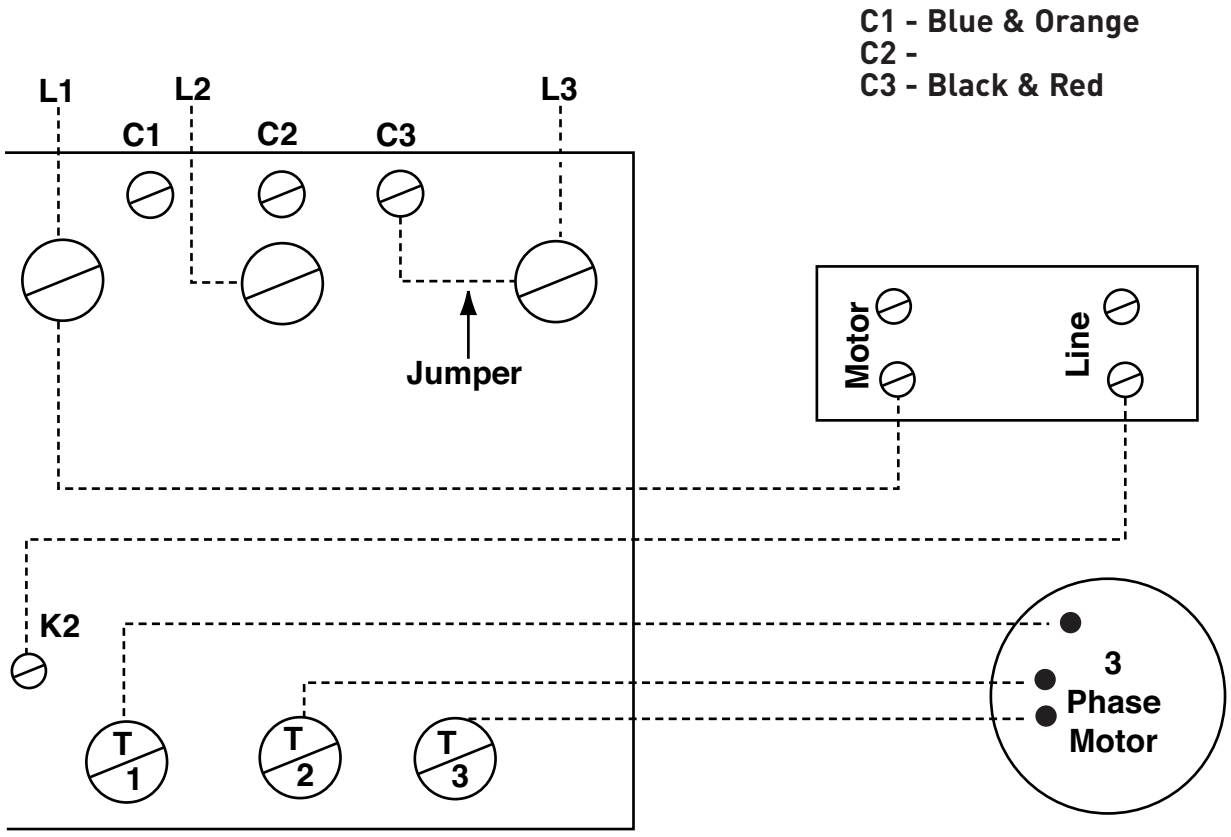
The pressure switch has an unloader or bleeder valve which unloads compression from the compressor for a loadless start-up. Each time the compressor cuts off air should be released to atmosphere from the bleeder valve. Air will disperse from this valve for only a few seconds, then stop. (Check Daily)

AIR INLET FILTER/SILENCER

It is very important that the air inlet filter/silencer be kept clean at all times. A dirty inlet filter reduces the capacity of the compressor.

WIRING DIAGRAM

Installation Should Be Made By a Competent Electrician



L2, L3 indicates supply line terminals. T1, T2, T3 indicates load.

MAINTENANCE

DAILY

- Check compressor visually.
- Check oil level and add oil as required.
- Drain moisture from system piping.
- Drain moisture from tank daily to prevent rust.

WEEKLY

- Turn power off and drain moisture from tank by opening drain cock in bottom of tank.
- Remove and clean intake air filters. Disassemble and wash element in detergent solution. Do not oil.
- Check V-belts for tightness. Belt tension should be adjusted to allow approximately 1/4 - 1/2 inch deflection with normal thumb pressure.
- Turn power off and clean dust and foreign material from cylinder head, motor, fan blade, air lines, intercooler and tank.

MONTHLY

- Check operation of high pressure safety valve by pulling ring.
- Check flywheel and motor pulley for tightness.

QUARTERLY

- Every 90 days also check entire system for air leakage around fittings, etc. using a soap solution. Tighten nuts and cap screws as required.
- Every 90 days or 1,000 operating hours, whichever comes first, change crankcase oil. Oil recommended: Premium Grade SchraderAir 826020 - 30WT Non-Detergent. Change oil more frequently, if compressor is located in very dirty environment.

" Oil capacity 6 quarts "

MAINTENANCE SCHEDULE - CHECK CHART

PROCEDURE	DAILY	WEEKLY	MONTHLY	YEARLY
Check Oil Level. **Caution! Do not overfill.**	X			
Give Compressor overall visual check	X			
Drain moisture accumulation from the air receiver	X			
Check the air distribution system for air leaks		X		
Clean cooling surfaces of compressor, intercooler and aftercooler		X		
Operate safety valves (pressure relief valve)			X	
Replace or clean intake filter element			X	
Inspect oil for contamination and change if necessary			X	
Check belts for correct tension and alignment			X	
Check pulley clamp bolts and set screws for tightness			X	
Inspect valve assemblies				XX
Inspect cushion chamber, if so equipped, and discharge line for excessive carbon accumulations				X
Inspect pressure switch diaphragm and contact points				X
Service electric motor	‡	‡	‡	‡
Drain Tank	X			

X = Check more often if extremely dirty condition exists.
XX = Every 6 months
‡ = Per manufacturer's recommendations

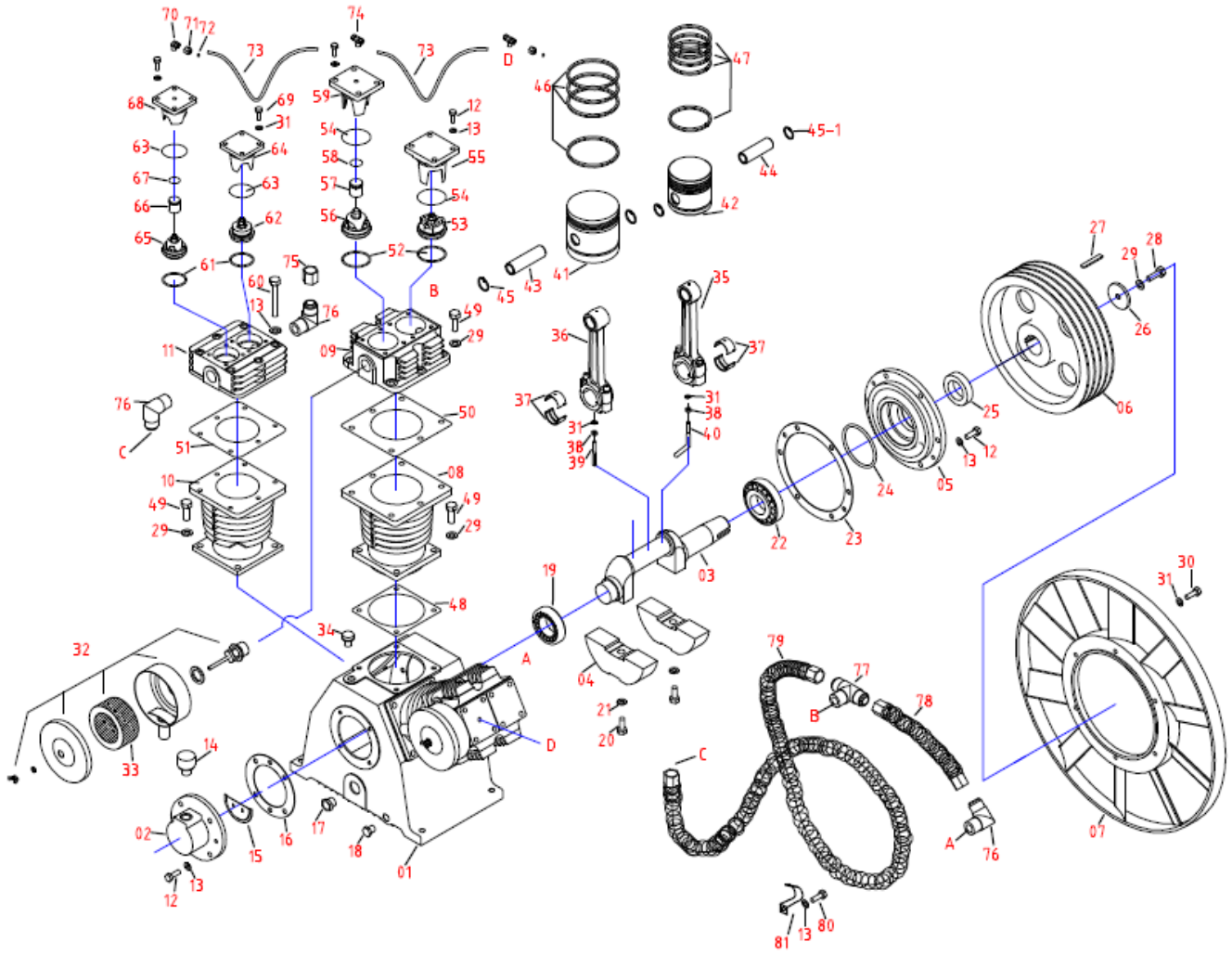
TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
1. Compressor will not operate.	1. No electrical power. 2. Pressure switch not making contact	1. Turn on power. 2. See pressure switch adjustment.
2. Excessive noise in operation	1. Loose pulley, flywheel, belt, beltguard, cooler, clamps or accessories. 2. Lack of oil in crankcase. 3. Piston hitting the valve plate. 4. Compressor floor mounting loose. 5. Defective crankcase. 6. Excessive crankshaft end play.	1. Tighten. 2. Check for possible damage to bearings, replenish oil. 3. Remove the compressor cylinder head and inspect for foreign matter on top of the piston. Add a new gasket and reassemble the head. 4. Tighten. 5. Repair or replace. 6. Adjust and shim properly.
3. Knock - same cycle as R.P.M.	1. Main bearings. 2. Connecting rod bearing.	1. Replace bearings. 2. TIghten.
4. Knock occurs while compressor is loading.	1. Connecting rod bearings. 2. Wrist pins, wrist pin bearings.	1. Replace rod. 2. Replace complete piston assembly.
5. Milky oil in oil reservoir.	1. Water entering oil reservoir due to compressor operating in high humidity environment.	1. Pipe air intake to less humid air\ source.
6. Excessive oil consumption.	1. Restricted air intake. 2. Oil leaks. 3. Worn piston rings. 4. Wrong oil viscosity. 5. Compressor titled too much. 6. Scored cylinder.	1. Clean or replace air filter. 2. Tighten bolts or replace gasket. 3. Replace piston rings. 4. Drain oil, refill with oil or proper viscosity. See Lubrication Section. 5. Level compressor. 6. Replace cylinder.
7. Oil in discharge air.	1. Compressor air intake restricted. 2. Worn piston rings. 3. Excessive oil in compressor. 4. Wrong oil viscosity. 5. Piston rings installed up-side down.	1. Clean air filter element and check for other restrictions in the intake system. 2. Replace rings. 3. Drain down to full mark on sight gauge. 4. Check viscosity. **See Lubrication Section.** 5. Install ring in proper position.
8. Compressor vibrates.	1. Mounting bolts loose. 2. Compressor not properly mounted. 3. Pulley and flywheel misaligned. 4. Belts loose. 5. Bent crankshaft.	1. Tighten. 2. Level compressor so that all feet touch the floor before tightening down. 3. Realign. 4. Tighten belts. See Maintenance Section. 5. Replace crankshaft.

TROUBLESHOOTING (continued)

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
9. Air blowing our of inlet	1. Broken first stage inlet valve.	1. Replace valve assembly.
10. Insufficient pressure at point of use.	1. Leaks or restriction. 2. Restricted air intake. 3. Slipping belts. 4. Service hose too small. 5. Excessive air requirement.	1. Check for leaks, restriction, or piping. Repair problem. 2. Clean or replace air filter element. 3. Tighten belts. See Maintenance Section. 4. Replace with larger hose. 5. Limit air requirement to compressor capacity.
11. Receiver does not hold pressure when compressor is unloaded.	1. Faulty check valve.	1. Bleed Tank! Disassemble check valve assembly, clean or replace faulty parts. DANGER - DO NOT DISASSEMBLE CHECK VALVE WITH AIR IN TANK. NOTE - CHECK VALVE IS ALWAYS THE FIRST VALVE IN THE LINE LEADING FROM THE TANK TO THE COMPRESSOR.
12. Excessive belt wear.	1. Pulley out of alignment. 2. Belts too tight. 3. Belts too loose. 4. Pulley or flywheel wobble. 5. Nick in belt grove of pulley or flywheel.	1. Realign motor pulley with compressor flywheel. 2. Adjust tension. See Maintenance Section. 3. Adjust tension. See Maintenance Section. 4. Check for worn crankshaft, keyway or pulley bore, resulting from running with loose pulleys. Check for bent crankshaft. 5. File smooth.
13. Excessive discharge air temperature.	1. Dirty cooling surfaces. 2. Poor ventilation. 3. Blown head gasket. 4. Restricted air intake 5. Worn valves.	1. Clean cooling surfaces of cylinder, intercooler and discharge tube. 2. Improve ventilation or relocate compressor. See Installation. 3. Replace head gasket. 4. Clean or replace air filter element. 5. Repair or replace valves.
14. Receiver pressure builds up slowly.	1. Dirty air filter. 2. Blown cylinder head gasket. 3. Worn or broken low pressure intake or discharge valves. 4. Air leaks. 5. Loose belts. 6. Speed too slow.	1. Clean or replace filter element. 2. Install new gasket. 3. Install new head gasket. 4. Tighten joints. 5. Tighten belts. See Maintenance Section. 6. Check speed.

823015 Two-Stage
Compressor Pump



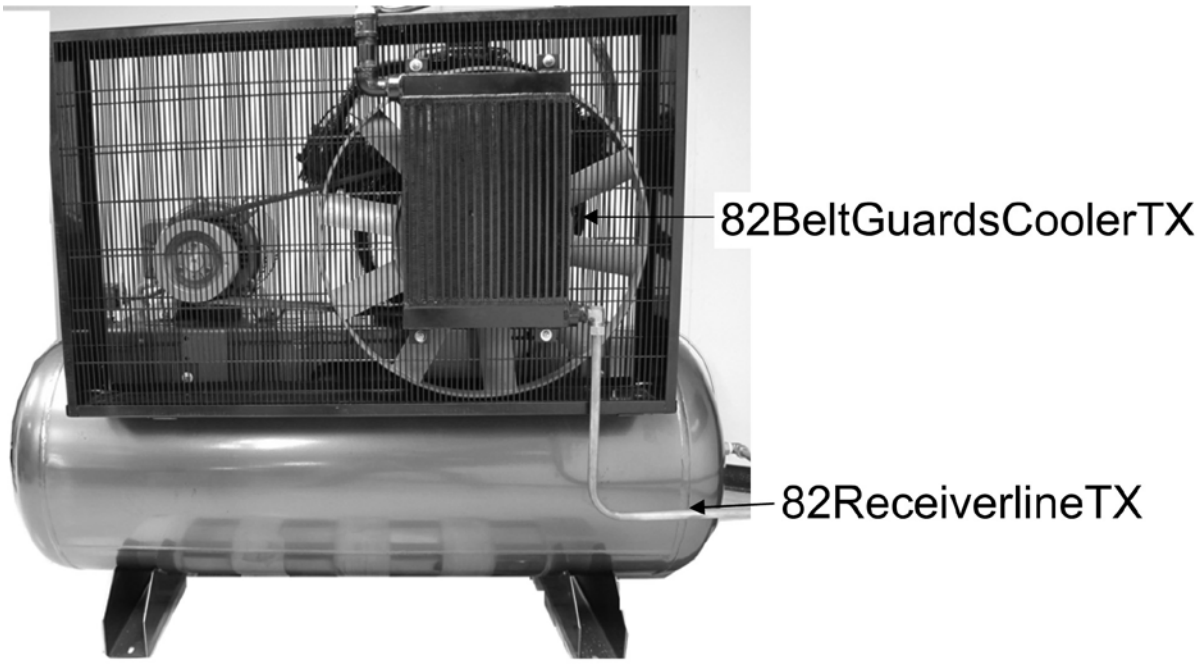
823015TX - PUMP PARTS

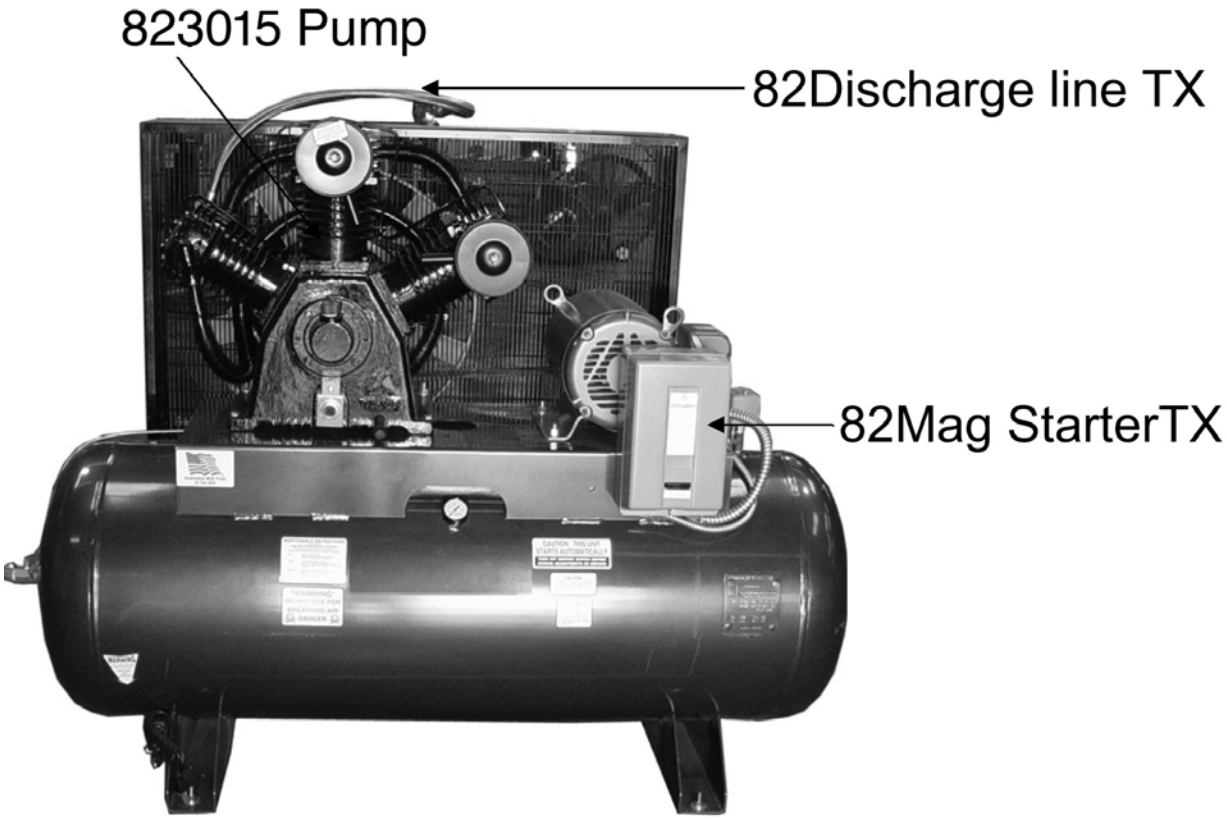
ITEM	PART #	DESCRIPTION	QTY
1	430001	Crankcase GS43	1
2	430002	Cap-Rear GS43	1
3	430003	Crankshaft GS43	1
4	430004	Balance GS43	2
5	430005	Cap - Front GS43	1
6	430006	Flywheel GS43	1
7	430007	Fan GS43	1
8	430008	Cylinder GS43	2
9	430009	Head GS43	2
10	430008-1	HP Cylinder G43	1
11	430009-1	Head GS43	1
12	431001	Capscrew - HEX M10X30	26
13	431002	Lock Washer Φ 10	35
14	431003	Breather - Crankcase GS43	1
15	431005	Oil Baffle Plate GS43	1
16	431005	Gasket - Rear Cap GS43	1 (*a)
17	431006	Oil Sight Glass GS43	1
18	431007	Oil Drain Plug GS22	1
19	431008	Bearing - Front 32210	1
20	431009	Capscrew - HEX M16X20	2
21	431010	Lock Washer Φ 16	2
22	431011	Bearing Rear 30310	1
23	431012	Gasket - Front Cap GS43	1 (*a)
24	431013	Shim-Brg Adjustment GS43	1
25	431014	Seal - Shaft GS43	1
26	431015	Spacer - Flywheel GS43	1
27	431016	Key - Flywheel	1
28	431017	Capscrew - Hex M12X40	1
29	431018	Lock Washer Φ 12	25
30	431019	Capscrew - Hex M8X30	6
31	431020	Lock Washer Φ 8	17
32	431021	Filter - Inlet Assembley GS43	2
33	431022	Filter - Replacement Element GS43	2
34	431023	Oil - Plug GS43	1
35	431024-1	HP Connecting Rod GS43	1
36	431024	Connecting Rod GS43	2
37	431025	Insert Half GS43	3
38	431026	Nut M8	3
39	431027	Straight Dipper - Oil GS43	1
40	431028	Oblique Dipper - Oil GS43	2
41	431029	Piston GS43	2
42	431029-1	HP Piston GS43	1
43	431030	Wrist Pin - Piston GS43	2

ITEM	PART #	DESCRIPTION	QTY
44	431030-1	HP Wrist Pin - Piston GS43	1
45	431031	Snap Ring - Internal ☐ 30	4
45-1	431031-1	Snap Ring - Internal ☐ 28	2
46	431032	Piston Ring Set GS43	2
47	431032-1	HP Piston Ring Set GS43	1
48	431033	Gasket - Cylincer to Crankcase GS43	3 (*a)
49	431034	Capscrew - Hex M12X335	24
50	431035	Gasket - Cylinder Head GS43	2 (*a)
51	431035-1	Gasket - Cylinder Head GS33	1 (*a)
52	431036	Valve Copper Gasket GS43	4
53	431037	Disch Valve GS43	2
54	431038	"O" Ring - Hold Down Cover GS43	4
55	431039	Hold Down Cover - Disch GS43	2
56	431040	Inlet Valve GS43	2
57	431041	Unloader Piston GS43	2
58	431042	"O" Ring - Unloader Piston GS43	2
59	431043	Hold Down Cover - Inlet GS43	2
60	431044	Capscrew - Hex M10X80	6
61	431036-1	Valve Copper Gasket GS33	2
62	431037-1	HP Disch Valve G43	1
63	431038-1	"O" Ring - Hold Down cover GS33	2
64	431039-1	Hold-Down Cover-Disch GS33	1
65	431040-1	HP Inlet Valve G43	1
66	431041-1	Unloader Piston G33	1
67	431042-1	"O" Ring-Unloader Pisotn GS33	1
68	431043-1	Hold Down Cover - Inlet GS331	1
69	431045	Capscrew - Hex M8X25	8
70	431046	Copper Elbow GS43	1
71	431047	Copper Nut GS12	5
72	431048	Copper Seal Ring GS43	5
73	431049	Aluminum Tube Φ 6 GS43	2
74	431050	Tee-Male Tube GS12	2
75	431051	Nut- Compression GS43	1
76	431052	Elbow GS43	3
77	431053	Tee GS43	1
78	431054	Intercooler Tube GS43	1
79	431055	Intercooler Tube GS43	1
80	431056	Capscrew-Hex M10X20	1
81	431057	Cooler Line Strap G43	1
*a	430000-1	COMPLETE GASKET KIT GS43	1

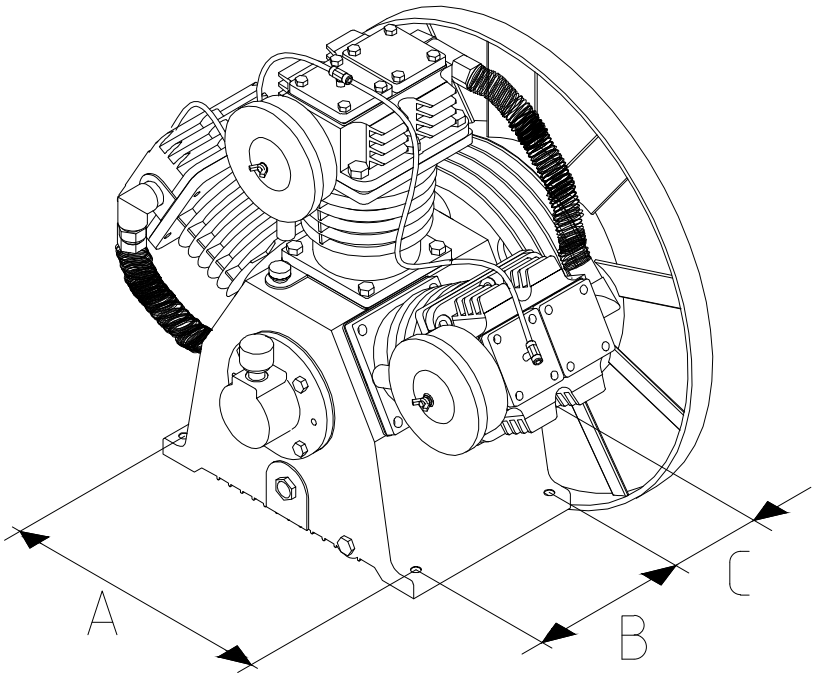
#63 VITON HIGH TEMP O-RING = 55 X 3 PART# 93602-870055 need 2
#54 O-Ring - 93602-810065 - need - 4

82-P7575 - Check Valve





823015 Two-Stage Compressor Pump



Dimensions		
A	inch	15.59
	mm	396
B	inch	8.98
	mm	228
C	inch	6.85
	mm	174
L (Shape)	inch	31.10
	mm	790
W (Shape)	inch	22.05
	mm	560
H (Shape)	inch	25.59
	mm	650
Weight	lb	335.16
	kg	152

823015 Technical Data		
Motor	HP	15
	KW	11
Air Delivered	ACFM	43.1
	m^3/min	1.22
Pressure	PSI	172
	Bar	12
Rpm	860	
Cylinders	∅120X2, ∅100X1	
Bore	inch	4.72(3.94)
	mm	120(100)
Stroke	inch	3.15
	mm	80
Flywheel dia.	inch	13.78
	mm	350
Groove Type	B	

AIR CONSUMPTION CHART

	PSI	SCFM
Air file	4.0*	
Air filter cleaner	70-100	3.6*
Air motors		
1 HP	7.0	
2 HP	13.0	
3 HP	19.0	
Air polisher	16.0	
Blow gun	90-100	2.4
Brake tester	70-100	3.6
Caulking gun	10-70	2.2
Circular saw		17.0
Die grinder		6.0
Drill, 3/8 inch	70-90	4.0*
Engine cleaner	90-100	5.0
Fender hammer	70-100	9.0*
Filing machine	90-100	5.0*
Grease gun	120-150	6.0*
Hydraulic lift		6.0-12.0*
Impact wrench		
3/8 inch	70-90	3.0*
1/2 inch	70-90	4.0*
5/8 inch	70-90	5.0*
3/4 inch	70-90	8.0*
1 inch	70-90	12.0*
Air hammer	90-100	7.0*
Orbital sander	70-100	12.0*
Panel cutter	70-100	4.0
Nail hammer	90-100	4.0
Rim stripper	125-150	5.0
Spark plug cleaner	90-100	5.0
Air scaler		5.0

	PSI	SCFM
Spray gun		
Production	90-100	16.0*
Touchup	90-100	8.0*
Undercoating	90-100	19.0*
Tire bead breaker	125-150	12.0*
Tire changer	125-150	1.0
Tire hammer	90-100	12.0
Tire inflation line	125-150	1.4
Tire spreader	125-150	1.0
Transmission flusher	70-100	3.0
Carbon remover	70-100	3.0*
Burring tool	90-100	5.0*
Vacuum cleaner	125-150	6.0
Hydraulic floor jack	125-150	6.0
Radiator tester	90-100	1.1
Air saw		6.0
Vertical air sanders		
	5"	12.0
	7"	16.0
	9"	18.0
Vertical grinder		
	3"	6.0
	4"	12.0
	7"	24.0

Consult the spec. supplied with your air tool or equipment for the exact operating pressure and air volume requirements.

***Continuous Run Tools**

Schrader International Inc.

Warranty Statement

For (1) one year from the date of purchase, Schrader International Inc. will replace or repair for the original purchaser free of charge, any part or parts found upon examination by manufacturer/any Authorized Service Center to be defective in material or workmanship
or both. This warranty shall not be effective unless the warranty registration certificate is completely filled out and returned to Schrader International Inc. within thirty (30) days from the delivery of the equipment to the original end-user.

All transportation charges for parts submitted for replacement under this warranty must be borne by the purchaser. There is no other express warranty. Implied warranties, including those of merchantability and fitness for a particular purpose are limited to one year from the date of purchase and to the extent permitted by law, any and all implied warranties are excluded. This is the exclusive remedy, and liability for consequential damages under any and all warranties are excluded to the extent exclusion is permitted by law.

All claims pertaining to the merchandise in this schedule must be filed with Schrader International Inc. within 12 months of the invoice date, and a registration card is on file with Schrader, or they will not be honored. Prices, discount, and terms are subject to change without notice or as stipulated in specific product quotations. All agreements are contingent upon strikes, accidents, and other causes beyond our control. All shipments are carefully inspected and counted before leaving the factory. Please inspect carefully any receipt of merchandise, noting any discrepancy or damage on the carrier's freight bill at time of delivery. Discrepancies or damage, including hidden or obvious that occurred in transit are the carrier's responsibility and related claims should be made by the customer directly with the carrier.

To locate the closest Authorized Service Center for service assistance, resolution of a service problem or for product information and operation, call or write to:

Schrader International Inc.
205 Frazier Road
Altavista, VA 24517

Email: TechSvc@SchraderIntl.com
1.800.288.1804
Tech Service, ext. 1577

What is not covered under this warranty:

- Electric motors or gasoline engines are covered by the Original Manufacturer's Warranty and should be returned (by the customer) to their authorized service center for service.
- Consumer compressors used in commercial, industrial or rental purposes will be covered by warranty for (90) ninety days from date of purchase only.
- Any failure that results from an accident, purchaser's abuse, neglect or failure to operate products in accordance with instructions provided in the owner's manual(s) supplied with compressor.
- Pump or valve failure caused by rain, excessive humidity, corrosive environments or other contaminants.
- Cosmetic defects that do not interfere with the compressor's functionality.
- Damage due to incorrect voltage or improper wiring.
- Pump wear or valve damage caused by any oil contamination or by failure to follow proper oil maintenance guidelines.
- This warranty is invalid if the factory-applied serial number has been altered or removed from the product, or an electric compressor has been used in conjunction with a generator.
- Freight damage

CUSTOMER SERVICE • SALES
1-800-327-1335

TECHNICAL SERVICE • PARTS
1-800-345-0578

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